

# Overview of an Underground Storage Tank Inspection



# PURPOSE OF INSPECTION

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- Protect drinking water, lakes, streams, etc.
- Education.
- Protect property value.

# TECHNICAL ASSISTANCE INSPECTIONS

- **Technical assistance inspections are requested by owner or operator.**
- **Ecology does not issue penalties based on these inspections unless there is a significant threat to human health or the environment.**



# COMPLIANCE INSPECTIONS

- **Ecology initiates compliance inspections, which may be announced or unannounced.**
- **Ecology may take enforcement actions based on the outcome of the inspection.**

# RECORD KEEPING

The following records must be on-site:

- Facility Compliance Tag
- Master Business License.

The following records must be on-site or be immediately available:

- Proof of financial responsibility.
- Monitoring & testing results (corrosion protection, tank & piping release detection).
- 3rd-party certifications for release detection equipment (visit [www.nwglde.org](http://www.nwglde.org)).

Note: Service providers must send completed checklists for tank/line tightness tests, retrofit/repairs, and corrosion protection tests to the owner, who must send a copy to: **Washington Dept of Ecology (Toxics Cleanup Program, P.O. Box 47655, Olympia, WA 98504-7655)**. Service providers: call Ecology for triplicate checklists, (360)407-7224.

# Facility Compliance Tag

- Ecology has issued each site a Facility Compliance Tag to prove the tank systems on each site meet 1998 upgrade requirements. The tag must be visible to the fuel distributor.
- Suppliers who knowingly deliver fuel to a site that does not have or display the tag are subject to a penalty.
- Owners who accept fuel deliveries at a site that does not have or display the tag are also subject to a penalty.



# Master Business License (MBL)

- Each tank name must be listed as an endorsement on MBL.
- Renew MBL annually by paying the tank fees and providing proof of financial responsibility.
- If MBL has expired or does not have your tanks listed on it, call the Department of Licensing at **(360) 664-1414**.

The image shows a sample Master Business License (MBL) for the State of Washington. The license is issued to GRAB N BAG SUPERMARKETS, INC. and includes various registrations and licenses. The background features a faint image of the Washington state seal. A large diagonal watermark reading "SAMPLE ONLY" is overlaid on the right side of the document.

**STATE OF WASHINGTON**

**MASTER LICENSE SERVICE**  
**REGISTRATIONS AND LICENSES**

UNIFIED BUSINESS ID #: 609 123 456  
BUSINESS ID #: 001  
LOCATION: 0001  
EXPIRES: 12-31-2003

ORGANIZATION TYPE  
DOMESTIC PROFIT CORPORATION

GRAB N BAG SUPERMARKETS, INC.  
MR. LUCKY'S GENERAL STORE  
12345 GEORGE WASHINGTON WAY SW  
TUMWATER WA 98502-1486

SCALE-SMALL (3)  
LP GAS METER-SMALL (1)  
INDUSTRIAL INSURANCE  
GROCERY STORE - BEER/WINE  
MINOR WORK PERMIT  
UNDERGROUND STORAGE TANKS (3):  
#3, #4, #5

LIQUID FUEL METER-LOW (6)  
UNEMPLOYMENT INSURANCE  
TAX REGISTRATION  
LOTTERY RETAILER  
CIGARETTE RETAILER  
SHOPKEEPER

CITY LICENSES/REGISTRATIONS:  
TUMWATER GENERAL BUSINESS

DUTIES OF MINORS:  
COLLECT CARTS, BAG GROCERIES, STOCK SHELVES, CLEANING

REGISTERED TRADE NAMES:  
MR. LUCKY'S GENERAL STORE  
LUCKY'S

The above entity has been issued the business registrations or licenses listed  
13911 DEPARTMENT OF LICENSING, BUSINESS & PROFESSIONS DIVISION,  
P.O. BOX 9034 OLYMPIA, WA 98507-9034 (360) 664-1400  
Director, Department of Licensing

# Financial Responsibility

- Owners of operational regulated tanks must have pollution liability insurance or another method of financial responsibility described in WAC 173-360-400. This protects owners from clean-up costs if their system has a release.
- Financial responsibility records must be located on-site or immediately available.
- Provide this information to the Department of Licensing each year when you renew your MBL. Questions? Contact Pollution Liability Insurance Agency (PLIA), at **(360) 586-5997**.

**Note: Most insurers require owners to be in compliance with UST regulations.**



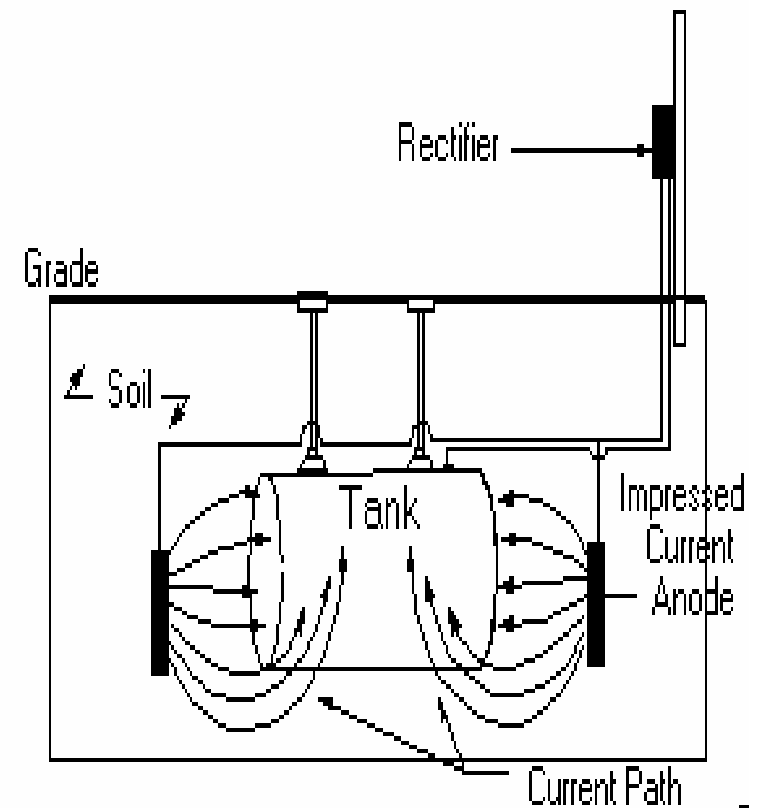
# CORROSION PROTECTION FOR STEEL USTS

If any part of your system is constructed of steel (tanks and/or piping) and is in contact with the ground, it must be corrosion protected with:

- **Impressed current** (creates electrical field around UST to aid in the prevention of corrosion), **OR**
- **Sacrificial anode** (passive), **OR**
- **Interior lining**, **OR**
- **Interior lining with cathodic protection.**

# Impressed Current (active)

- Tank operator must record rectifier meter readings at least every 60 days (most operators record monthly).
- Amp and volt readings must be recorded and checked against limits set by your cathodic protection service provider.
- If readings are higher or lower than the recommended range, the tank may not be protected. Call a corrosion expert.
- Cathodic protection tests must be conducted for tanks and piping within 1-6 months after installation, and every 3 years thereafter.



# Sacrificial Anodes (passive)

- Sacrificial anodes, if properly maintained, will significantly reduce the rate of corrosion of the steel parts of your system.
- Cathodic protection tests must be conducted within 1-6 months after installation, and every 3 years thereafter.
- If you do not pass a test, call a corrosion expert.



# Interior-Lined Tanks

- Tanks only interior lined (no cathodic protection) must have an internal inspection 10 years from the lining installation and every 5 years thereafter.
- If a tank has both interior lining and cathodic protection, interior lining inspections are not required. However, the tank must meet all cathodic protection requirements, including a cathodic protection test every 3 years.
- If a tank does not pass an inspection, requirements of WAC 173-360-325 must be met to determine if a tank can be relined.

# TANK RELEASE DETECTION



## Tank Release Detection Record Keeping

- The last 3 months of results (daily, weekly or monthly) must be available for on-site inspection or must be immediately available.
- The last 5 years of results (at least monthly) must be accessible.

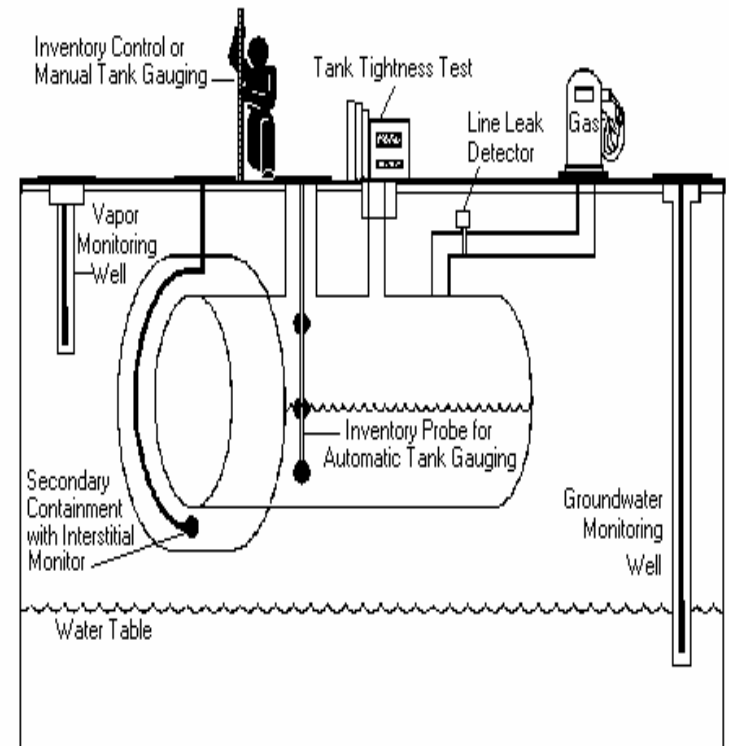
# Tank Release Detection Methods

➤ **Manual Inventory Control**

**OR**

➤ **Monthly Monitoring Methods:**

- **Automatic tank gauge.**
- **Interstitial monitoring.**
- **Statistical Inventory Reconciliation.**
- **Vapor or Groundwater Monitoring (contact Ecology regional office for guidance on these methods).**



## Manual Inventory Control (Stick Measurement)

### Daily sticking

- Tightness test every 5 yrs (10 yr limit).

### Weekly sticking

- Up to 1000 gal: no tightness test (life of tank).
- 1001-2000 gal: 5-yr tightness test (10-yr limit).
- Only emergency power generators > 2000 gal: 5-yr tightness test (10-yr limit).

### Monthly sticking (*emergency power generators only*)

- Up to 1000 gal: no tightness test (life of tank).
- 1001-2000 gal: annual tightness test (life of tank).



***Note: Operators must conduct appropriate end-of-month calculations for daily, weekly, or monthly sticking and maintain records onsite. Suspected releases must be investigated.***



## Automatic Tank Gauge (ATG)

- Each tank must pass a minimum of one leak test (0.2 gph) at the highest fuel level each month. Daily leak tests recommended.
- Check for an alarm and investigate.



**Note: Most 3rd-party certifications require annual checks of the ATG system.**

## Interstitial Monitoring for Double-Wall Tanks

- Check system monthly to ensure it is operating according to manufacturer's requirements.
- Document monthly system check by printout or monthly log.
- Check, document, investigate, and correct all alarms.

**Note: Most 3<sup>rd</sup>-party certifications require annual checks of interstitial sensors.**

## Statistical Inventory Reconciliation (SIR) for Tanks

- Use an SIR provider that has been 3<sup>rd</sup>-party certified.
- Operator must mail records at end of each month to SIR vendor.
- SIR vendor must mail pass/inconclusive/fail results to the tank operator within 15 days.
- If there are two consecutive non-passing results, a tank tightness test must be performed within 15 days.
- Provide proof problems have been corrected for inconclusive or failed months.

**If you use other methods of tank release detection, contact your Ecology Regional Office for information.**



<b>Southwest</b>	360-407-6300
<b>Northwest</b>	425-649-7000
<b>Central</b>	509-575-2490
<b>Eastern</b>	509-329-3400

# PIPING RELEASE DETECTION



# Pressurized Piping Release Detection

Pressurized piping must have two modes of release detection & an annual test.  
Choose one from each category:

1. Catastrophic leak detection (3 gph):

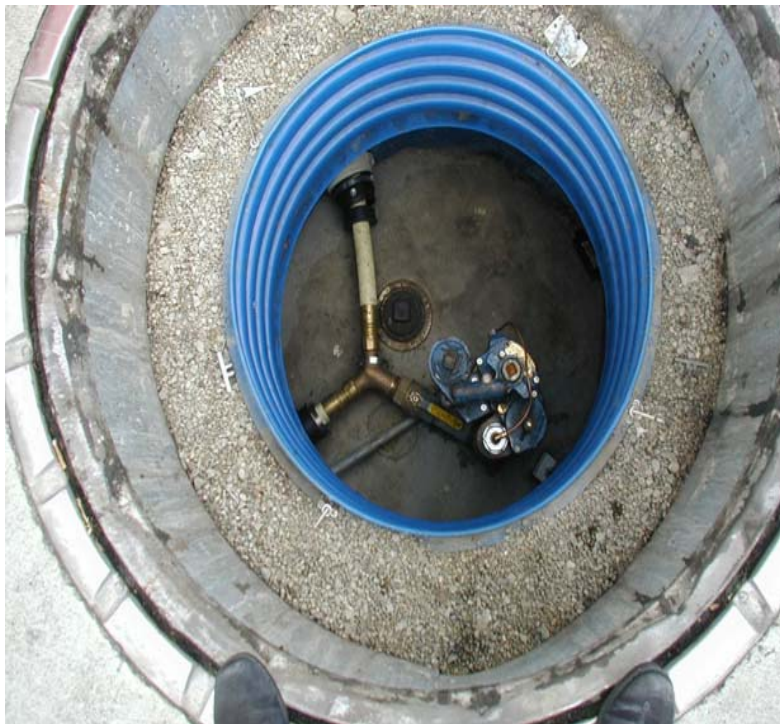
- Mechanical line leak detector, or
- Electronic line leak detector with turbine shut-off.

AND

2. Slow leak detection:

- Annual line tightness test at 0.1 gph, or
- Electronic line leak detector tightness test at 0.2 gph, or
- Interstitial monitoring (double wall lines with sump leak sensors), or
- SIR (3<sup>rd</sup>-party certified for lines), or
- Groundwater or vapor monitoring (consult Ecology Regional Office).

# Mechanical Line Leak Detector



- Maintain records indicating that the detector has been function tested annually.

Note: This fulfills requirements for catastrophic leak detection.



## Electronic Line Leak Detector (ELLD)

- A service provider must check the operation of the ELLD annually.
- Your ATG may be set up to test your lines (check with service provider if uncertain). If it is, show records of monthly tests to .2 gph.
- The system must be able to shut down the turbine if it detects a leak. Most systems include a visual and/or audible alarm.

Note: When an ELLD used, it satisfies the requirements for both catastrophic and slow release detection.



## Interstitial Monitoring for Double-Wall Lines

If your system has leak sensors in the turbine sumps:

- Confirm monthly that the alarm system panel “recognizes” that the probe is there. Maintain records of date and result. Ecology recommends an annual test of the leak sensors.
- This fulfills the slow leak detection requirement. To meet catastrophic leak detection requirements for pressurized piping, remember to test the operation of the line leak detector annually.

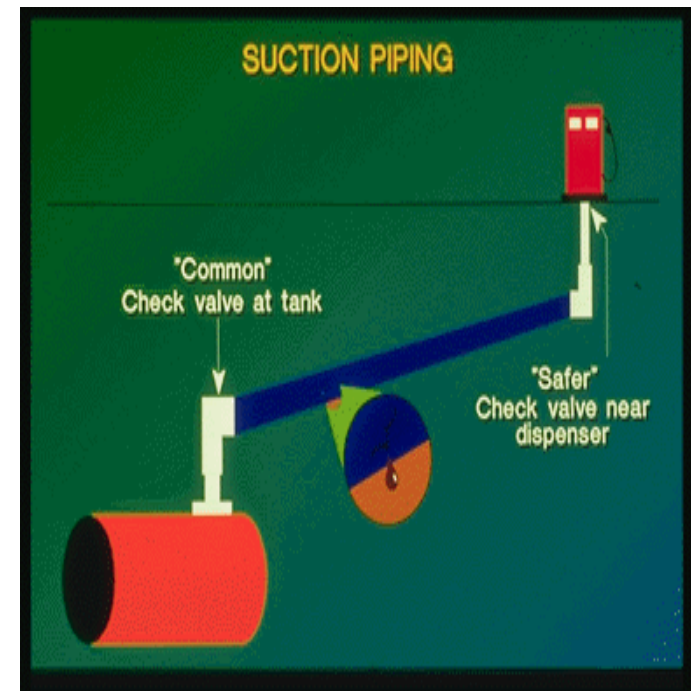
# Statistical Inventory Reconciliation (SIR) for Lines

- Check 3<sup>rd</sup>-party certification of vendor to determine if SIR method meets line leak detection requirements.
- If so, SIR will meet the slow leak detection requirements for pressurized piping.

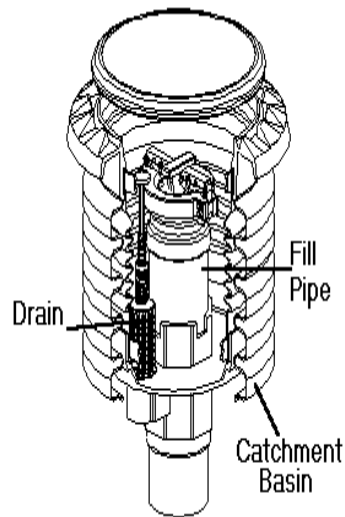
Note: To meet catastrophic requirements for pressurized piping, remember to test the operation of the line leak detector annually.

# Suction Piping Release Detection

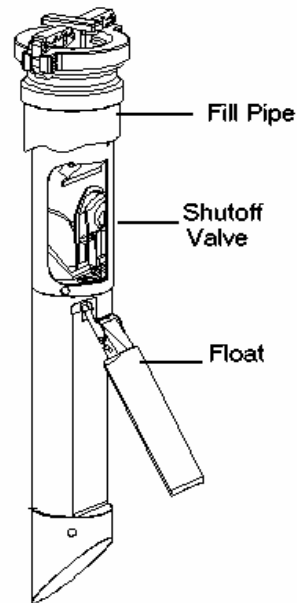
- If you have a check valve only under the dispenser, no line tightness test is required.
- If you have a check valve at the tank,
  - perform a tightness test every 3 years, or
  - conduct monthly monitoring.
- Maintain the testing records along with your tank records.



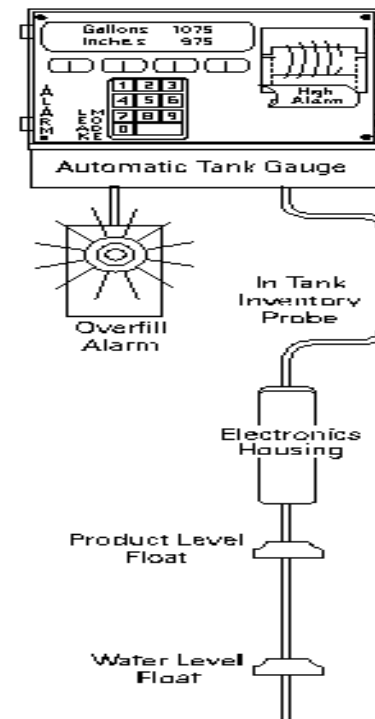
# SPILL & OVERFILL PROTECTION



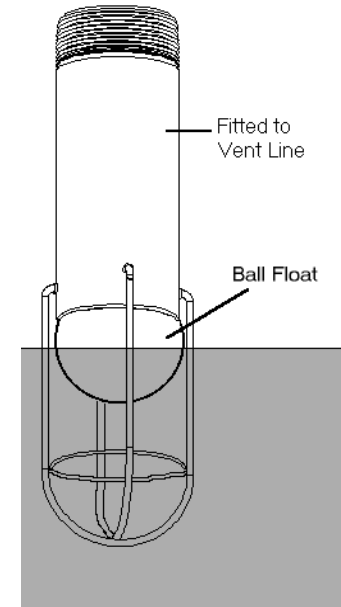
Spill Bucket



Automatic Shutoff



Overfill Alarm



Ball Float Valve

# Spill Buckets

- Spill buckets contain spills when delivery hose and fill pipe uncouple.
- Periodically inspect buckets.
- Buckets must be clean (no dirt or liquid).
- Buckets must be leak-free (no holes or cracks).

# Overfill Protection Options

Prevent overfilling of tanks using an audible alarm system, an automatic shutoff device, or a ball float valve.

- Alarm system: must activate when tank is 90% full. Alarm must be heard by delivery driver.
- Automatic shutoff device: must be set to shut off when tank is 95% full.
- Ball float valve: have documentation available showing that a ball float valve was installed, or have your UST service company document that the ball float valve is present.

The ball float valve is designed to restrict the flow of product to the tank when the tank is 95% full.

# EQUIPMENT INSPECTION

- Consider asking your local inspector to conduct a technical assistance inspection when your service provider is conducting your annual testing.
- This works the inspection into the activities already scheduled.

# Equipment Inspection Points

Inspectors will look at the following equipment:

- Impressed current rectifier, if applicable.
- ATG, if applicable.
- Interstitial access points.
- Equipment in turbine sumps.
- Spill and overfill equipment (spill buckets, automatic shutoff valves, and overfill alarms).
- Piping verification in turbine sumps and/or under dispensers.



# POST-INSPECTION BRIEFING

- After the inspector finishes the inspection he/she will discuss the results of the inspection with you and provide you a copy of the inspection results.
- If the results of the inspection include a “Notice of Non-Compliance” (NONC) and/or a Notice of Penalty, the inspector will discuss the violations found, what is necessary to correct them, and a time frame to complete the corrections.

# QUESTIONS?

If you have any questions please contact the inspector in your Ecology region for assistance.

Ecology appreciates your time in reading this presentation and your interest in maintaining a leak-free UST system.

## Regional Offices:

<b>Southwest</b>	<b>360-407-6300</b>
<b>Northwest</b>	<b>425-649-7000</b>
<b>Central</b>	<b>509-575-2490</b>
<b>Eastern</b>	<b>509-329-3400</b>



Also use these phone numbers for reporting a release from an UST system (within 24 hrs) or for reporting a spill (immediately).